

Appendix H

Cost Estimates For Implementing Best Management Practices (BMPs)

Table H-1. Commercial Nurseries

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs	Nutrient Management Effectiveness (percent)	Water Management Effectiveness (percent)	Components				Capital Costs		Annual Operation and Maintenance	
					Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Low	High	Low	High
COMMERCIAL NURSERIES 339 Acres	LOW	Nutrient Management										
		Facility nutrient reduction management plan			each	1	\$ -	\$ 10,000	\$ -	\$ 10,000		
		Soil nutrient analysis 1			each	3	\$ 7	\$ 25	\$ 21	\$ 75		
		Irrigation water analysis ²			each	1	\$ 5	\$ 30	\$ 5	\$ 30		
		Subtotal							\$ 26	\$ 10,105		
		Irrigation Management										
		None										
		Runoff/Erosion Management										
		None										
								TOTAL	\$ 26	\$ 10,105	\$ 3	\$ 1,011
LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs			Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Capital Costs		Annual Operation and Maintenance	
									Low	High	Low	High
COMMERCIAL NURSERIES 339 Acres	MEDIUM	Nutrient Management										
		Facility nutrient reduction management plan			each	1	\$ -	\$ 10,000	\$ -	\$ 10,000		
		Soil nutrient analysis ¹			each	3	\$ 7	\$ 25	\$ 21	\$ 75		
		Irrigation water analysis ²			each	1	\$ 5	\$ 30	\$ 5	\$ 30		
		Subtotal							\$ 26	\$ 10,105		
		Irrigation Management										
		Irrigation system upgrades (441, 442) ^{3 4 5}	5-35	40-85	each	1	\$ 350	\$ 3,600	\$ 350	\$ 3,600		
		Irrigation system - tailwater recovery (447) ^{3 5}	5-15	40-45	each	1	\$ 4,500	\$ 25,000	\$ 4,500	\$ 25,000		
		Irrigation water management (449) ^{3 5}	20-35	45-60	each	1	\$ 50	\$ 750	\$ 50	\$ 750		
		Subtotal							\$ 4,900	\$ 29,350		
		Runoff/Erosion Management										
		None										
								TOTAL	\$ 4,926	\$ 39,455	\$ 493	\$ 3,946
LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs			Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Capital Costs		Annual Operation and Maintenance	
									Low	High	Low	High
COMMERCIAL NURSERIES 339 Acres	HIGH	Nutrient Management										
		Facility nutrient reduction management plan			each	1	\$ -	\$ 10,000	\$ -	\$ 10,000		
		Soil nutrient analysis ¹			each	3	\$ 7	\$ 25	\$ 21	\$ 75		
		Irrigation water analysis ²			each	1	\$ 5	\$ 30	\$ 5	\$ 30		
		Subtotal							\$ 26	\$ 10,105		
		Irrigation Management										
		Irrigation system upgrades (441, 442) ^{3 4 5}	5-35	40-85	each	1	\$ 350	\$ 3,600	\$ 350	\$ 3,600		
		Irrigation system - tailwater recovery (447) ^{3 5}	5-15	40-45	each	1	\$ 4,500	\$ 25,000	\$ 4,500	\$ 25,000		
		Irrigation water management (449) ^{3 5}	20-35	45-60	each	1	\$ 50	\$ 750	\$ 50	\$ 750		
		Subtotal							\$ 4,550	\$ 25,750		
		Runoff/Erosion Management										
		Access road management (560) ^{3 5}										
		Paved Drives			square yard	480	\$ 2	\$ 4	\$ 816	\$ 1,920		
		Runoff management system (570) ^{3 5}							\$ -	\$ -		
		Filter Trap	10-25		acre	0.25	\$ 375	\$ 12,500	\$ 94	\$ 3,125		
		Filter Strips (393) ^{3 5}							\$ -	\$ -		
		Landscaping			acre	0.05	\$ 450	\$ 3,500	\$ 23	\$ 175		
		Subtotal							\$ 932	\$ 5,220		
								TOTAL	\$ 5,508	\$ 41,075	\$ 551	\$ 4,108

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Cost Estimates For Implementing Best Management Practices (BMPs)

Table H-2. Agriculture

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs	Nutrient Management Effectiveness (percent)	Water Management Effectiveness (percent)	Components				Capital Costs		Annual Operation and Maintenance	
					Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Low	High	Low	High
AGRICULTURE 436 Acres	LOW	Nutrient Management										
		Facility nutrient reduction management plan			each	1	\$ -	\$ 10,000	\$ -	\$ 10,000		
		Soil nutrient analysis 1			each	3	\$ 7	\$ 25	\$ 21	\$ 75		
		Irrigation water analysis ²			each	1	\$ 5	\$ 30	\$ 5	\$ 30		
		Subtotal							\$ 26	\$ 10,105		
		Irrigation Management										
		None										
		Runoff/Erosion Management										
		None										
								TOTAL	\$ 26	\$ 10,105	\$ 3	\$ 1,011
AGRICULTURE 436 Acres	MEDIUM	Nutrient Management										
		Facility nutrient reduction management plan			each	1	\$ -	\$ 10,000	\$ -	\$ 10,000		
		Soil nutrient analysis ¹			each	3	\$ 7	\$ 25	\$ 21	\$ 75		
		Irrigation water analysis ²			each	1	\$ 5	\$ 30	\$ 5	\$ 30		
		Subtotal							\$ 26	\$ 10,105		
		Irrigation Management										
		Irrigation system upgrades (441, 442) ^{3, 4, 5}	5-35	40-85	each	1	\$ 350	\$ 3,600	\$ 350	\$ 3,600		
		Irrigation system - tailwater recovery (447) ^{3, 5}	5-15	40-45	each	1	\$ 4,500	\$ 25,000	\$ 4,500	\$ 25,000		
		Irrigation water management (449) ^{3, 5}	20-35	45-60	each	1	\$ 50	\$ 750	\$ 50	\$ 750		
		Subtotal							\$ 4,900	\$ 29,350		
		Runoff/Erosion Management										
		None										
								TOTAL	\$ 4,926	\$ 39,455	\$ 493	\$ 3,946
AGRICULTURE 436 Acres	HIGH	Nutrient Management										
		Facility nutrient reduction management plan			each	1	\$ -	\$ 10,000	\$ -	\$ 10,000		
		Soil nutrient analysis ¹			each	3	\$ 7	\$ 25	\$ 21	\$ 75		
		Irrigation water analysis ²			each	1	\$ 5	\$ 30	\$ 5	\$ 30		
		Subtotal							\$ 26	\$ 10,105		
		Irrigation Management										
		Irrigation system upgrades (441, 442) ^{3, 4, 5}	5-35	40-85	each	1	\$ 350	\$ 3,600	\$ 350	\$ 3,600		
		Irrigation system - tailwater recovery (447) ^{3, 5}	5-15	40-45	each	1	\$ 4,500	\$ 25,000	\$ 4,500	\$ 25,000		
		Irrigation water management (449) ^{3, 5}	20-35	45-60	each	1	\$ 50	\$ 750	\$ 50	\$ 750		
		Subtotal							\$ 4,900	\$ 29,350		
		Runoff/Erosion Management										
		Access road management (560) ^{3, 5}		85-90	square yard	1000	\$ 2	\$ 4	\$ 2,150	\$ 4,300		
		Pave Roads		55-60	square yard	1000	\$ 2	\$ 4	\$ 1,700	\$ 4,000		
		Pave Drives										
		Runoff management system (570) ^{3, 5}										
		Filter Trap	10-25		acre	0.2	\$ 375	\$ 12,500	\$ 75	\$ 2,500		
		Filter Strips (393) ⁵										
		Filter strip (10-20 ft wide)	2-10		acre	0.5	\$ 375	\$ 12,500	\$ 188	\$ 6,250		
		Buffer strip (20-30 ft wide)	10-20		acre	0.5	\$ 425	\$ 1,700	\$ 213	\$ 850		
		Landscaping	5-15		acre	0.1	\$ 450	\$ 3,500	\$ 45	\$ 350		
		Subtotal							\$ 4,370	\$ 18,250		
								TOTAL	\$ 9,296	\$ 57,705	\$ 930	\$ 5,771

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Cost Estimates For Implementing Best Management Practices (BMPs)

Table H-3. Orchards

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs	Nutrient Management Effectiveness (percent)	Water Management Effectiveness (percent)	Components				Capital Costs		Annual Operation and Maintenance	
ORCHARDS 781 Acres	LOW				Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Low	High	Low	High
		Nutrient Management										
		Facility nutrient reduction management plan			each	1	\$ -	\$ 10,000	\$ -	\$ 10,000		
		Soil nutrient analysis 1			each	3	\$ 7	\$ 25	\$ 21	\$ 75		
		Irrigation water analysis ²			each	1	\$ 5	\$ 30	\$ 5	\$ 30		
		Subtotal							\$ 26	\$ 10,105		
	Irrigation Management											
	None											
	Runoff/Erosion Management											
	None											
					TOTAL				\$ 26	\$ 10,105	\$ 3	\$ 1,011

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs			Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Capital Costs		Annual Operation and Maintenance	
ORCHARDS 781 Acres	MEDIUM								Low	High	Low	High
		Nutrient Management										
		Facility nutrient reduction management plan			each	1	\$ -	\$ 10,000	\$ -	\$ 10,000		
		Soil nutrient analysis ¹			each	3	\$ 7	\$ 25	\$ 21	\$ 75		
		Irrigation water analysis ²			each	1	\$ 5	\$ 30	\$ 5	\$ 30		
		Subtotal							\$ 26	\$ 10,105		
		Irrigation Management										
		Irrigation system upgrades (441, 442) ^{3 4 5}	5-35	40-85	each	1	\$ 350	\$ 3,600	\$ 350	\$ 3,600		
Irrigation system - tailwater recovery (447) ^{3 5}	5-15	40-45	each	1	\$ 4,500	\$ 25,000	\$ 4,500	\$ 25,000				
Irrigation water management (449) ^{3 5}	20-35	45-60	each	1	\$ 50	\$ 750	\$ 50	\$ 750				
Subtotal								\$ 4,900	\$ 29,350			
	Runoff/Erosion Management											
	None											
					TOTAL				\$ 4,926	\$ 39,455	\$ 493	\$ 3,946

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs			Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Capital Costs		Annual Operation and Maintenance	
ORCHARDS 781 Acres	HIGH								Low	High	Low	High
		Nutrient Management										
		Facility nutrient reduction management plan			each	1	\$ -	\$ 10,000	\$ -	\$ 10,000		
		Soil nutrient analysis ¹			each	3	\$ 7	\$ 25	\$ 21	\$ 75		
		Irrigation water analysis ²			each	1	\$ 5	\$ 30	\$ 5	\$ 30		
		Subtotal							\$ 26	\$ 10,105		
		Irrigation Management										
		Irrigation system upgrades (441, 442) ^{3 4 5}	5-35	40-85	each	1	\$ 350	\$ 3,600	\$ 350	\$ 3,600		
		Irrigation system - tailwater recovery (447) ^{3 5}	5-15	40-45	each	1	\$ 4,500	\$ 25,000	\$ 4,500	\$ 25,000		
		Irrigation water management (449) ^{3 5}	20-35	45-60	each	1	\$ 50	\$ 750	\$ 50	\$ 750		
		Subtotal							\$ 4,900	\$ 29,350		
		Runoff/Erosion Management										
		Access road management (560) ^{3 5}			square yard	1000	\$ 2	\$ 4	\$ 2,150	\$ 4,300		
		Pave roads		85-90	square yard	1000	\$ 2	\$ 4	\$ 1,700	\$ 4,000		
Pave drives		55-60										
Runoff management system (570) ^{3 5}												
Filter trap	10-25		acre	0.2	\$ 375	\$ 12,500	\$ 75	\$ 2,500				
Filter Strips (393) ⁵							\$ -	\$ -				
Filter strip (10-20 ft wide)	2-10		acre	0.5	\$ 375	\$ 12,500	\$ 188	\$ 6,250				
Buffer strip (20-30 ft wide)	10-20		acre	0.5	\$ 425	\$ 1,700	\$ 213	\$ 850				
Landscaping	5-15		acre	0.1	\$ 450	\$ 3,500	\$ 45	\$ 350				
Subtotal								\$ 4,370	\$ 18,250			
					TOTAL				\$ 9,296	\$ 57,705	\$ 930	\$ 5,771

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Table H-4. Parks

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs	Nutrient Management Effectiveness (percent)	Water Management Effectiveness (percent)	Components				Capital Costs		Annual Operation and Maintenance	
					Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Low	High	Low	High
PARKS 5 Acres	LOW	Nutrient Management										
		Facility nutrient reduction management plan			each	0	\$ -	\$ -	\$ -	\$ -		
		Subtotal							\$ -	\$ -	\$ -	\$ -
		Irrigation Management										
		None										
		Runoff/Erosion Management										
		None										
					TOTAL				\$ -	\$ -	\$ -	\$ -

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs	Nutrient Management Effectiveness (percent)	Water Management Effectiveness (percent)	Components				Capital Costs		Annual Operation and Maintenance	
					Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Low	High	Low	High
PARKS 5 Acres	MEDIUM	Nutrient Management										
		Facility nutrient reduction management plan			each	0	\$ -	\$ -	\$ -	\$ -		
		Subtotal							\$ -	\$ -		
		Irrigation Management										
		Irrigation water management (449) ⁵	20-35	45-60	each	1	\$ 50	\$ 750	\$ 50	\$ 750		
		Subtotal							\$ 50	\$ 750		
		Runoff/Erosion Management										
		None										
					TOTAL				\$ 50	\$ 750	\$ 5	\$ 75

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs	Nutrient Management Effectiveness (percent)	Water Management Effectiveness (percent)	Components				Capital Costs		Annual Operation and Maintenance	
					Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Low	High	Low	High
PARKS 5 Acres	HIGH	Nutrient Management										
		Facility nutrient reduction management plan			each	0	\$ -	\$ -	\$ -	\$ -		
		Subtotal							\$ -	\$ -		
		Irrigation Management										
		Irrigation water management (449) ⁵	20-35	45-60	each	1	\$ 50	\$ 750	\$ 50	\$ 750		
		Subtotal							\$ 50	\$ 750		
		Runoff/Erosion Management										
		Runoff management system (570) ^{3,5}							\$ -	\$ -		
		Parking lot water retention		5-10	each	1	\$ 150	\$ 1,500	\$ 150	\$ 1,500		
		Filter strips	5-15		acre	1	\$ 375	\$ 12,500	\$ 375	\$ 12,500		
		Filter trap	10-25		acre	1	\$ 375	\$ 12,500	\$ 375	\$ 12,500		
		Subtotal							\$ 900	\$ 26,500		
					TOTAL				\$ 950	\$ 27,250	\$ 95	\$ 2,725

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Cost Estimates For Implementing Best Management Practices (BMPs)

Table H-5. Residential

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs	Nutrient Management Effectiveness (percent)	Water Management Effectiveness (percent)	Components				Capital Costs		Annual Operation and Maintenance	
RESIDENTIAL 618 Acres	LOW	Nutrient Management			Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Low	High	Low	High
		Facility nutrient reduction management plan			each	1	\$ -	\$ -	\$ -	\$ -		
		Subtotal							\$ -	\$ -		
		Irrigation Management										
		None										
		Runoff/Erosion Management										
		None										
					TOTAL				\$ -	\$ -	\$ -	\$ -

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs			Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Capital Costs		Annual Operation and Maintenance	
RESIDENTIAL 618 Acres	MEDIUM	Nutrient Management			Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Low	High	Low	High
		Facility nutrient reduction management plan			each	1	\$ -	\$ -	\$ -	\$ -		
		Subtotal							\$ -	\$ -		
		Irrigation Management										
		Irrigation water management (449) ⁵	20-35	45-60	each	1	\$ 50	\$ 750	\$ 50	\$ 750		
		Subtotal							\$ 50	\$ 750		
		Runoff/Erosion Management										
		None										
					TOTAL				\$ 50	\$ 750	\$ 5	\$ 75

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs			Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Capital Costs		Annual Operation and Maintenance	
RESIDENTIAL 618 Acres	HIGH	Nutrient Management			Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Low	High	Low	High
		Facility nutrient reduction management plan			each	1	\$ -	\$ -	\$ -	\$ -		
		Subtotal							\$ -	\$ -		
		Irrigation Management										
		Irrigation water management (449) ³	20-35	45-60	each	1	\$ 50	\$ 750	\$ 50	\$ 750		
		Subtotal							\$ 50	\$ 750		
		Runoff/Erosion Management										
		Runoff management system (570) ^{3,5}										
		Paved parking	80-85		square yard	480	\$ 1	\$ 2	\$ 408	\$ 936		
		Filter trap	10-25		acre	1	\$ 375	\$ 12,500	\$ 375	\$ 12,500		
		Subtotal							\$ 783	\$ 13,436		
					TOTAL				\$ 833	\$ 14,186	\$ 83	\$ 1,419

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Cost Estimates For Implementing Best Management Practices (BMPs)

Table H-7. Septic Tank Disposal Systems

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs	Nutrient Management Effectiveness (percent)	Water Management Effectiveness (percent)	Components				Capital Costs		Annual Operation and Maintenance	
SEPTIC TANK DISPOSAL SYSTEMS	LOW				Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Low	High	Low	High
407 Units		Facility nutrient reduction management plan			each	1	\$ -	\$ -	\$ -	\$ -		
		Septic tank inspection ⁶			each	160	\$ 75	\$ 200	\$ 12,000	\$ 32,000		
		Septic system pumping ⁶			each	40	\$ 150	\$ 350	\$ 6,000	\$ 14,000		
		Subtotal							\$ 18,000	\$ 46,000		
					TOTAL				\$ 18,000	\$ 46,000	\$ 1,800	\$ 4,600

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs							Capital Costs		Annual Operation and Maintenance	
SEPTIC TANK DISPOSAL SYSTEMS	MEDIUM				Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Low	High	Low	High
407 Units		Facility nutrient reduction management plan			each	1	\$ -	\$ -	\$ -	\$ -		
		Septic tank inspection ⁶			each	200	\$ 75	\$ 200	\$ 15,000	\$ 40,000		
		Septic system pumping ⁶			each	50	\$ 150	\$ 350	\$ 7,500	\$ 17,500		
		Subtotal							\$ 22,500	\$ 57,500		
					TOTAL				\$ 22,500	\$ 57,500	\$ 2,250	\$ 5,750

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs							Capital Costs		Annual Operation and Maintenance	
SEPTIC TANK DISPOSAL SYSTEMS	HIGH				Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Low	High	Low	High
407 Units		Facility nutrient reduction management plan			each	1	\$ -	\$ -	\$ -	\$ -		
		Septic tank inspection ⁶			each	400	\$ 75	\$ 200	\$ 30,000	\$ 80,000		
		Septic system pumping ⁶			each	100	\$ 150	\$ 350	\$ 15,000	\$ 35,000		
		Replace Conventional Systems with Enhanced System ⁷			each	170	\$ 10,000	\$ 20,000	\$ 1,700,000	\$ 3,400,000		
										\$ -	\$ -	
									\$ -	\$ -		
		Subtotal							\$ 1,745,000	\$ 3,515,000		
					TOTAL				\$ 3,490,000	\$ 7,030,000	\$ 349,000	\$ 703,000

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Cost Estimates For Implementing Best Management Practices (BMPs)

Table H-8. Caltrans

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs	Nutrient Management Effectiveness (percent)	Water Management Effectiveness (percent)	Components				Capital Costs		Annual Operation and Maintenance	
					Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Low	High	Low	High
CALTRANS 214 Acres	LOW	Nutrient Management										
		Stormwater Chemical Analysis (nitrogen and phosphorous only)			each	3	\$ 35	\$ 50	\$ 105	\$ 150		
		Facility nutrient reduction management plan			each	1	\$ -	\$ 10,000	\$ -	\$ 10,000		
		Subtotal							\$ 105	\$ 10,150		
		Irrigation Management										
		None ⁷										
		Runoff/Erosion Management										
		None										
					TOTAL				\$ 105	\$ 10,150	\$ 11	\$ 1,015

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs	Nutrient Management Effectiveness (percent)	Water Management Effectiveness (percent)	Components				Capital Costs		Annual Operation and Maintenance	
					Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Low	High	Low	High
CALTRANS 214 Acres	MEDIUM	Nutrient Management										
		Stormwater Chemical Analysis (nitrogen and phosphorous only)			each	3	\$ 35	\$ 50	\$ 105	\$ 150		
		Stormwater Chemical Analysis (Metals, Organics, Pesticides, and PCBs)			each	3	\$ 800	\$ 1,400	\$ 2,400	\$ 4,200		
		Facility nutrient reduction management plan			each	1	\$ -	\$ 10,000	\$ -	\$ 10,000		
		Subtotal							\$ 2,505	\$ 14,350	\$ 251	\$ 1,435
		Irrigation Management										
		None ⁷							\$ -	\$ -		
		Runoff/Erosion Management										
		Runoff management system (570) ^{3,5}										
		Filter strips	5-15		acre	1	\$ 375	\$ 12,500	\$ 375	\$ 12,500		
		Infiltration Trench	5-10		per foot	5000	\$ 15	\$ 75	\$ 75,000	\$ 375,000		
		Subtotal							\$ 75,375	\$ 387,500	\$ 7,538	\$ 38,750
					TOTAL				\$ 77,880	\$ 401,850	\$ 7,788	\$ 40,185

LAND USE CATEGORY	BMP LEVEL OF EFFORT	POTENTIAL MPs / BMPs	Nutrient Management Effectiveness (percent)	Water Management Effectiveness (percent)	Components				Capital Costs		Annual Operation and Maintenance	
					Unit	Number of Units	Cost per unit (low)	Cost per unit (high)	Low	High	Low	High
CALTRANS 214 Acres	HIGH	Nutrient Management										
		Stormwater Chemical Analysis (nitrogen and phosphorous only)			each	3	\$ 35	\$ 50	\$ 105	\$ 150		
		Stormwater Chemical Analysis (Metals, Organics, Pesticides, and PCBs)			each	3	\$ 800	\$ 1,400	\$ 2,400	\$ 4,200		
		Facility nutrient reduction management plan			each	1	\$ -	\$ 10,000	\$ -	\$ 10,000		
		Subtotal							\$ 2,505	\$ 14,350		
		Irrigation Management										
		None ⁸							\$ -	\$ -		
		Runoff/Erosion Management										
		Runoff management system (570) ^{3,5}										
		Filter strips	5-15		acre	1	\$ 375	\$ 12,500	\$ 375	\$ 12,500		
		Filter trap	10-25		acre	0.5	\$ 375	\$ 12,500	\$ 188	\$ 6,250		
		Infiltration Trench	5-10		per foot	5000	\$ 15	\$ 75	\$ 75,000	\$ 375,000		
		Sediment Basin (350) ³			each	1	\$ 700	\$ 1,000,000	\$ 700	\$ 1,000,000		
		Subtotal							\$ 76,263	\$ 1,393,750		
					TOTAL				\$ 78,768	\$ 1,408,100	\$ 7,877	\$ 140,810

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Cost Estimates For Implementing Best Management Practices (BMPs)

Footnotes for Table:

1. Mission Resource Conservation District (MRCD) 1997. Brochure: Mission Resource Conservation District - Soil Nutrient Analysis. Fallbrook, CA. Printed May 1997.
2. MRCD 1997. Brochure: Irrigation Water Management - Water Quality Analysis. Fallbrook, CA. Printed May 1997.
3. Soil Conservation Practice Numbers from U.S. Department of Agriculture (USDA), May 1995. Calleguas Creek Watershed Erosion and Sediment Control Plan for Mugu Lagoon. USDA Natural Resources Conservation Service, in cooperation with Ventura County Resource Conservation District and the California State Coastal Conservancy. Davis, CA, May 1995.
4. Upgrades include sprinkler, drip irrigation, and microspray systems
5. BMP practices, cost estimates, and percent effectiveness from U.S. Department of Agriculture (USDA), May 1995. Calleguas Creek Watershed Erosion and Sediment Control Plan for Mugu Lagoon. USDA Natural Resources Conservation Service, in cooperation with Ventura County Resource Conservation District and the California State Coastal Conservancy. Davis, CA, May 1995. Table 4-b.
6. MRCD 1999. Focus on Resource Conservation: Septic System Operation, Inspection, and Maintenance - The Homeowner's Guide. Fallbrook, CA. Summer 1999.
7. Enhanced septic tank disposal systems can provide additional treatment to household wastewater, such as reduction of waste strength, removal of pathogens, and/or removal of nitrate-nitrogen, by adding components that utilize a combination of aerobic and anaerobic treatment before effluent is released to the environment. University of Rhode Island (URI) Cooperative Extension, 2001. Septic System Information for Rhode Islanders, Frequently Asked Questions Fact Sheet. Rhode Island Regional Water Quality Program, University of Rhode Island College of Env. & Life Sciences, Dept. of Natural Resources Science, Cooperative Extension On-Site Wastewater Training Center. May 2001.
8. Assumed no significant irrigation by Caltrans occurs along the Interstate 15 corridor

Assumptions:

For Commercial Nurseries, Agriculture, Orchards, and Caltrans land use categories, the Facility NRMP is estimated to range from \$0 to \$10,000.

For Parks, Residential, Septic Tank Disposal Systems, and Urban land use categories, the County of San Diego NRMP is assumed to cover this issue.

Average commercial nursery size in Fallbrook is approximately 12 acres. Based on personal communication with Paul Davy, Supervising Agricultural Inspector, Stormwater Management, County of San Diego, Department of Agricultural, Weights & Measures on May 21, 2003.

Average agricultural operation size in San Diego County is approximately 13 acres. Based on USDA, 1997. 1997 Census of Agriculture Highlights for San Diego County, California. USDA, National Agricultural Statistics Service, 1997 Census of Agriculture, Volume 1 Geographic Area Series, "Table 1. County Summary Highlights: 1997," <http://www.nass.usda.gov/census/census97/highlights/ca/cac037.txt>, printed on December 17, 2003.